

ANNUAL REPORT

OF THE

INSPECTOR AND BOARD OF VISITORS

OF THE

UNITED STATES MILITARY ACADEMY,

MADE TO

THE SECRETARY OF WAR

FOR

THE YEAR 1870.



WASHINGTON.  
GOVERNMENT PRINTING OFFICE.  
1870.



# OFFICERS OF THE MILITARY ACADEMY.

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## INSPECTOR.

Inspector General EDMUND SCHRIVER, *U. S. A.*,  
War Department, Washington, D. C.

## SUPERINTENDENT.

Colonel THOMAS G. PITCHER,  
*U. S. Army.*

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## MILITARY STAFF.

Captain EDWARD C. BOYNTON, *U. S. A.*, *Adjutant.*  
Captain TULLY MCCREA, *U. S. A.*, *Quartermaster.*  
Captain ROBERT CATLIN, *U. S. A.*, *Treasurer.*  
Surgeon THOMAS A. McPARLIN, *U. S. A.*, *Post Surgeon.*  
Ass't Surgeon VAN BUREN HUBBARD, *U. S. A.*, *Assistant Post Surgeon.*

## ACADEMIC STAFF.

Lt. Col. EMORY UPTON, } *Commandant of Cadets and Instructor of ARTIL-*  
*U. S. A.*, } *LERY, CAVALRY, AND INFANTRY TACTICS.*

Capt. ALEXANDER PIPER, } *Assistant Instructor of Artillery Tactics.*  
3d Artillery, }

Capt. ALEXANDER S. CLARKE, } *Assistant Instructor of Infantry Tactics.*  
*U. S. A.*, }

Capt. ALFRED E. BATES, } *Assistant Instructor of Cavalry Tactics.*  
2d Cavalry, }

First Lieut. JAMES M. MARSHALL, } *Assistant Instructor of Infantry Tactics.*  
22d Infantry, }

First Lieut. WILLIAM S. STARRING, } *Assistant Instructor of Infantry Tactics.*  
7th Infantry, }

First Lieut. CHARLES KING, Jr., } *Assistant Instructor of Infantry, Artillery, and*  
1st Artillery, } *Cavalry Tactics.*

DENNIS H. MAHAN, LL. D. . . . . *Professor of MILITARY AND CIVIL ENGINEERING.*

Capt. PETER S. MICHIE, } *Assistant Professor of Military and Civil Engineering.*  
Engineers, }

Capt. GARRETT J. LYDECKER, } *Acting Assistant Professors of Military and Civil*  
Engineers, } *Engineering.*

First Lieut. JOHN C. MALLERY, } *Acting Assistant Professors of Military and Civil*  
Engineers, } *Engineering.*

Second Lieut. FREDERICK A. MAHAN, } *Acting Assistant Professors of Military and Civil*  
Engineers, } *Engineering.*

WILLIAM H. C. BARTLETT, } *Professor of NATURAL AND EXPERIMENTAL PHI-*  
LL. D., } *LOSOPHY.*

First Lieut. JAMES MERCUR, Engineers,	} <i>Assistant Professor of Natural and Experimental Philosophy.</i>
Bvt. Second Lieut. EDGAR W. BASS, Engineers,	} <i>Acting Assistant Professors of Natural and Experi- mental Philosophy.</i>
Bvt. Second Lieut. WM. L. MAR- SHALL, Engineers,	
ALBERT E. CHURCH, LL. D. ....	<i>Professor of MATHEMATICS.</i>
Captain HERBERT A. HASCALL, 5th Artillery,	} <i>Assistant Professor of Mathematics.</i>
First Lieut. JOHN P. STORY, U. S. A.,	} <i>Acting Assistant Professors of Mathematics.</i>
First Lieut. JAMES C. POST, Engineers,	
Second Lieut. JOHN E. GREER, Ordnance,	
Second Lieut. ALBERT H. PAYSON, Engineers,	
Second Lieut. ROBERT FLETCHER, 1st Artillery,	
ROBERT W. WEIR, N. A. ....	<i>Professor of DRAWING.</i>
First Lieut. EDWARD H. TOTTEN, 13th Infantry,	} <i>Assistant Professor of Drawing.</i>
First Lieut. RICHARD C. CHURCHILL, 4th Artillery,	} <i>Acting Assistant Professor of Drawing.</i>
HYACINTH R. AGNEL. ....	<i>Professor of the FRENCH LANGUAGE.</i>
First Lieut. GEO. G. GREENOUGH, U. S. A.,	} <i>Assistant Professor of the French Language.</i>
Second Lieut. THOMAS H. BARBER, 1st Artillery,	} <i>Acting Assistant Professor of the French Language.</i>
Rev. JOHN W. FRENCH, D. D. ....	<i>Chaplain and Professor of ETHICS AND LAW.</i>
Capt. CHAS. C. PARSONS, 4th Artillery,	} <i>Assistant Professor of Ethics and Law.</i>
HENRY L. KENDRICK, LL. D.,	} <i>Professor of CHEMISTRY, MINERALOGY, AND GE- OLOGY.</i>
Second Lieut. JOHN PITMAN, JR., Ordnance,	} <i>Assistant Professor of Chemistry, Mineralogy, and Geology.</i>
Second Lieut. SAMUEL E. TILLMAN, 4th Artillery,	} <i>Acting Assistant Professor of Chemistry, Mineralogy, and Geology.</i>
PATRICE DE JANON. ....	<i>Professor of the SPANISH LANGUAGE.</i>
First Lieut. JAMES O'HARA, 3d Artillery,	} <i>Assistant Professor of the Spanish Language.</i>
Major THEODORE EDSON, Ordnance,	} <i>Instructor of ORDNANCE AND GUNNERY.</i>
Captain PETER S. MICHIE,* Engineers,	} <i>Instructor of PRACTICAL MILITARY ENGINEER- ING, MILITARY SIGNALING, AND TELEGRAPHY.</i>
First Lieut. EDWARD H. TOTTEN † 13th Infantry,	} <i>Assistant Instructor of Military Signaling and Tele- graphy and Acting Signal Officer.</i>
Second Lt. FREDERICK A. MAHAN, ‡ Engineers,	} <i>Commanding Detachment of Engineer Battalion.</i>
ANTONE LORENTZ. ....	<i>SWORD MASTER.</i>

\* Previously named as Assistant Professor of Engineering.

† Previously named as Assistant Professor of Drawing

‡ Previously named as Acting Assistant Professor of Engineering.

# REPORT OF INSPECTOR.

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WAR DEPARTMENT,  
OFFICE OF THE INSPECTOR OF THE MILITARY ACADEMY,  
*October 20, 1870.*

SIR: During the past year 58 cadets of the Military Academy have been graduated and appointed second lieutenants in the several regiments of artillery and cavalry; 17 have been discharged for marked deficiency in conduct or studies; 6 have resigned their appointments; 1 has deserted; and 4 have died of disease.

Of the candidates who have reported for examination 65 have been admitted; 74 have been rejected by the examining board; and 5 have been found physically disqualified.

There are now 58 vacancies in the list of authorized cadetships, but it is expected that most of them will be filled during the next ensuing year.

The Corps of Cadets numbers 228 members, representing every section of the country, the Army, and the Navy.

Within the next four years, about 200 educated officers can be supplied for the Army, equal in professional attainments to the requirements of any military organization in the world in the case of officers of their grade. After that period, it is believed, the average number of graduates will not be less than 70 per annum.

The appropriations for the pay of officers, instructors, and cadets, and for the support of the Academy generally, amount to \$216,500 for the present fiscal year.

The estimates for the coming fiscal year (exclusive of those for pay and allowances, which are determined by law and presented by the Paymaster General) exhibit a reduction of over \$33,000 from those last submitted, and of more than \$7,000 from the sums granted on those estimates.

It should be stated, in explanation of the unusual number of candidates rejected in the present year, that many of them were from the Southern States, where education was greatly deranged by the late war, and that, for the first time, written examinations in history, geography, and grammar were resorted to as affording a fairer test of the candidate's abilities and a better opportunity to profit by the law of 1867, which raised the standard of admission. This expedient, prompted by experience and necessity, while it increased for the time being the ratio of preliminary rejections, will, it is not doubted, reduce the ratio of subsequent discharges for non-proficiency and incapacity; a result beneficial not only to the Government but to the individuals concerned.

With a view to diminish the numbers thus rejected, measures have been devised for the encouragement and extension of competitive examinations in congressional districts entitled to cadet appointments, and for the informal, though thorough, examination of candidates by their own instructors and physicians before leaving their homes.

The results of the late examination have with greater force than ever before, directed the attention of the academic authorities to the utterly

superficial systems of education seemingly prevalent throughout the country. It is no longer unusual or surprising to find candidates, rejected at West Point for deficiency in the primary branches of a common school education, possessed of diplomas from reputable seats of learning attesting their proficiency in many kinds of knowledge. Though the requirements for admission are certainly not beyond the capacity of an ordinary pupil of the common schools old enough to receive a cadet appointment, it is doubtful whether a tithe of the vacancies at the Academy could be filled without the one year's preparation for examination provided for by law. For the information of those interested in this subject, a list of the questions used in the late examinations in geography, history, and grammar which 74 candidates failed in part to answer, is here inserted.

## GRAMMAR.

Parse the following sentences :

The star of military glory, rising like a meteor, like a meteor has set.  
To succeed in life requires more exertion than most young men, now-a-days, desire to make.

State the different parts of speech in English grammar.

Define a noun, and the different kinds of nouns.

State all the attributes that belong to verbs.

Define a participle, and the different kinds of participles.

Define the imperative mode, and write a sentence in which it is used.

Correct the grammatical errors in the following sentences, and state the reasons for each correction :

He had a black and white horse, which were driven together.  
It is not fit that such as us should engage therein.     &  
These kind of actions did him great injury.  
Each of them in their turn receive the benefit to which they are entitled.  
He pursued the fugitive with a single soldier, but he, proving treacherous, deserted and he escaped.  
Between you and I, the doctor was wrong to let him set down on the grass.  
They know how to write as well as him.  
I have seen that picture a month ago.  
The enemies who we have most to fear are those of our own hearts.  
Take the two first and, if you please, the three last.  
Richard acted very independent on the occasion.

State whether the following sentences be correct or false, and rectify errors where they occur :

The pleasures of the Imagination, by Akenside, is a highly philosophical poem.  
I laid in bed till eight.  
He who strikes me I will forgive.  
Few persons exert their ability to the utmost to all the good that lies in their power.  
We found our friend's house on fire and he dying with fright.  
I told you it was them.  
I found him better than I expected to have found him.  
I did not see nobody there.  
If I was her, I would reject him.  
Hear him read his lesson.  
We cannot be wise and good without taking pains for it.

(Time allowed, four hours.)

## HISTORY.

State by what people, and at about what time, the following States were colonized :  
Massachusetts, New York, Maryland, Virginia, Rhode Island, Georgia, Florida.

Name the principal generals of the Revolution, and where they served.

State, respectively, in what American war, under what opposing generals, and at about what time the following battles were fought :

Bunker Hill, Buena Vista, Saratoga, Chancellorsville, New Orleans, Shiloh.

Name the principal battles of the war of 1812.

State the causes of the Mexican war, the places where the first and last battles were fought, and under what American generals.

State the principal naval engagements of the war of 1812.

What States joined in the act which gave rise to the late rebellion ? Name the act.

State the principal events in the administration of Andrew Jackson.

Who was the president of the convention to frame the Constitution of the United States ?

State the principal events in the administration of James K. Polk.  
During how many terms did each of the following Presidents serve?

John Adams, James Monroe, Martin Van Buren, James Buchanan.

What Presidents have died during their respective terms of office?

(Time allowed, three hours.)

#### GEOGRAPHY.

What are zones?

What are the zones on the earth's surface, and how are they limited?

What are the grand divisions on the earth's surface?

What is a sea? Where is the Black Sea?

What waters separate the British Isles from the Continent?

What is a cape? Where are Capes Sable and St. Roque? What cape lies at the southern extremity of South America?

What is an isthmus? What isthmus unites Africa and Asia?

What river separates Kentucky from Ohio? Tennessee from Arkansas?

State the names of the principal rivers flowing into the Mississippi, from the east? From the west?

Name the principal ranges of mountains in the United States?

What are the principal mountains east of the Mississippi?

What is a strait? Where are the Straits of Mackinaw?

Bound the following States, and give the names of their capitals:

New Hampshire, Pennsylvania, Arkansas, California, Georgia.

Bound the following States and name, and locate their capitals:

Kansas, Ohio, Vermont, Louisiana.

What States border on Chesapeake Bay?

What States border on the Gulf of Mexico?

How do you go from Omaha to Pittsburg by water, and what States do you pass on both sides?

Name the Territories of the United States.

(Time allowed, three hours.)

In view of the increased labor devolved on the Corps of Engineers in connection with the interests of the domestic and foreign commerce of the country, the decreasing number of its officers, and the necessity of employing upon public works in charge of the War Department about 100 civil engineers, I renew the recommendation in my last year's report for an early repeal of so much of the existing law as excludes the higher graduates of the Academy from what has long been regarded as the merited reward of sustained mental effort and good conduct, viz: appointment in the Corps of Engineers.

It is regretted that certain disorderly acts (greatly misrepresented outside of the Academy) have marked the introduction into the institution of representatives of a newly enfranchised class of the people; but the investigations of a court of inquiry have shown that but very few of the cadets were engaged therein. The personal and official bearing of all the academic officers and nearly all the cadets, in a rather perplexing state of affairs, has been just and honorable in all respects.

The report of the Board of Visitors, addressed to the Secretary of War and referred to this office, is returned herewith for publication. The recommendations contained in it will receive the patient consideration of the academic authorities, and will be followed when practicable. It must not, however, be forgotten that the time of the cadets, as the board admits, is now fully occupied, and that the desired improvements, in practical chemistry and astronomy, in English literary culture, and in hygienic and sanitary instruction, can be effected only by a considerable enlargement of the course and extension of the time employed thereon, or an elevation of the standard of admission. With regard to

the former, the return, in the history of the Academy, from a five to a four years' course of study, upon the grounds, among other reasons, that the strain of discipline and monotony of life and locality were too great in the longer period, is the best argument against it. The alternative, which is favored by the board, was discussed at length in my last report. I will content myself, therefore, by remarking now, that to successfully raise the standard of the examination for admission, it will be necessary both to change the mode of appointment and to look to a smaller and more exclusive class for the future officers of the Army; and even then success would be doubtful, for it seems to be a fair deduction from past experience, that the demands of the present standard are quite up to, if not beyond, the ability of the schools of the country, generally, to meet.

In the new provision of law for a direct representation of both Houses of Congress in the yearly Board of Visitors, the friends of the Academy look for material advantages. It is at least believed that the merits of the institution will in future receive a readier recognition, and that misrepresentation of its tendencies will in due time be silenced.

Two thorough inspections of the Academy have been made by me during the year. The favorable reports of these annual inspections which it has heretofore been an agreeable duty to submit, will serve for the present occasion. Nothing of importance has gone backward or stood still. The officers to whom this just compliment is paid are the same by whom the gratifying progress of the last three or four years has been effected; the one exception being the commandant of cadets, Colonel Black, who, after a service of six years, lately retired from his post with a reputation and a record honorable to himself and beneficial to the service.

The near completion of the handsome fire-proof office building is reported with satisfaction. The security of the archives from fire will now be insured, and many existing inconveniences removed.

In a separate communication accompanying the estimates, the pressing need of an increased supply of water, of further improvement of the artillery and cavalry drill-ground, of the repair of old roads and the opening of new ones, and of interior fittings and furniture for the new offices, was fully set forth; and the subject is mentioned here only to ask attention to the statements there made, and to urge the favorable consideration of those estimates.

Very respectfully, your obedient servant,

ED. SCHRIVER,

*Inspector of the Military Academy.*

The Honorable THE SECRETARY OF WAR.

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REPORT OF THE BOARD OF VISITORS.

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## MEMBERS OF THE BOARD.

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### *Appointed by the President.*

Rev. JOHN P. NEWMAN, D. D., Chaplain of the Senate.  
Professor CHARLES A. YOUNG, Dartmouth College, New Hampshire.  
Colonel JOHN M. BROWN, late Kentucky Volunteers.  
Vice-Admiral DAVID D. PORTER, United States Navy.  
Rev. BARNAS SEARS, D. D., Agent Peabody Educational Fund.  
Judge THOMAS SETTLE, North Carolina.  
Hon. ITHAMAR C. SLOAN, Wisconsin.

### *Appointed by the President of the Senate.*

Hon. ROSCOE CONKLING, United States Senator from New York.  
Hon. FREDERICK A. SAWYER, United States Senator from South Carolina.

### *Appointed by the Speaker of the House of Representatives.*

Hon. JOHN A. LOGAN, Representative from Illinois.  
Hon. HENRY W. SLOCUM, Representative from New York.  
Hon. ROBERT C. SCHENCK, Representative from Ohio.

# REPORT OF THE BOARD OF VISITORS.

UNITED STATES MILITARY ACADEMY, *June 15, 1870.*

SIR: The Board of Visitors, appointed to attend the examinations of the Military Academy at West Point, respectfully submit the following report:

They met at the Academy on the 1st day of June, were introduced by the Superintendent to his associates, visited the buildings, organized, and witnessed a review of the battalion of cadets.

During the examinations, which commenced on the following day, the board were in nearly constant attendance, either in a body or by committee. They also took every opportunity to make themselves acquainted with the condition of the institution; its administration; its means, and methods of instruction, and its system of discipline. All possible facilities were furnished by the Superintendent, commandant, professors, and other officers.

## EXAMINATIONS.

As a general rule the examinations did honor to both instructor and pupil. The recitations of the graduating class in engineering, and in military and international law, were particularly excellent. On the other hand, their examination in Spanish was hardly satisfactory, owing partly to the fact that but little time is devoted to the study, and little importance attached to it by the cadets. In the lower classes there were similar differences between the different departments; but, on the whole, the examinations were as well sustained as in our most distinguished colleges; in some respects, better.

It seems to the board worthy of inquiry, whether *written examinations* might not be advantageously introduced in some of the departments, as giving a fairer and more searching test of attainment than the present purely oral method.

In the different military drills, which formed a portion of the exercises, the cadets displayed a high degree of proficiency.

## INSTRUCTION.

The instruction appears to be generally excellent and thorough, and by the well known subdivision of the classes into small sections of not more than ten or twelve members each is made exceedingly effective. Every man is reached and brought up to a faithfulness of study attained hardly anywhere else in the country. At the same time there appeared to be rather too close an adherence to text-books in some of the departments; and in some more modern and improved methods of instruction ought to be introduced.

In chemistry, for instance, the instruction is wholly by text-book recitation and lectures; the student has no opportunity for laboratory practice, which is now considered indispensable to a proper understanding of the subject. In astronomy also there is very little opportunity to acquire the use of the instruments by actual observation. The pro-

fessors, however, are not to blame for this. There is no suitable laboratory building, and the time and strength of the professor of natural philosophy and astronomy are already overtaxed by the present routine of his labor. But it seems clear that such dispositions should be made from time to time as will secure the adoption of all real improvements in the methods and appliances of instruction.

In this connection we would mention that during the past winter the Superintendent introduced, with the happiest results, the novelty of a course of lectures by distinguished gentlemen, upon various topics, literary and scientific. It is believed that in this way much may be done to liberalize the culture and widen the range of information of the graduates of the institution, and that too without any sacrifice of thoroughness and accuracy in their strictly professional studies. The plan meets our heartiest approval; but the expense should be borne by the Government, and not fall upon individuals, as was the case last season. We may remark, in passing, that this introduction of occasional popular lectures fairly exemplifies the progressive and liberal tendencies of the present administration of the Academy.

The visitors reiterate the recommendation made by the board of last year, that more instruction should be given in respect to the hygienic and sanitary principles which apply to the management of bodies of men. Ignorance or disregard of these principles has too often led to serious loss, and sometimes to defeat.

We observed in the cadets the same deficiency in the art of expression which has often been remarked upon by preceding boards. This was especially noticeable in the essays of the graduating class. While many of these compositions exhibited a good knowledge of the subject discussed, and some of them no little originality and vigor of thought, yet all, not excepting the best, were defaced by serious faults of style—sometimes even of grammar.

For this deficiency the Academy should hardly be held responsible. Its course is already so overcrowded with studies absolutely essential to the professional education of a military officer that there remains but little room for anything besides. The remedy, as it seems to us, is to be found in a higher standard of qualifications for admission—one which shall secure in the cadet at the beginning of his professional training a suitable foundation of general culture. The Government may fairly require that the young men selected to receive their education at the public expense should at least have mastered all the English branches that can be acquired in our public schools.

#### CONDITIONS OF ADMISSION.

The board accordingly are unanimously and strongly of opinion that the standard of preparatory qualifications ought to be considerably raised. In this they are sustained by the judgment of nearly all the officers of the institution as well as the general voice of the thinking and educated men of the country. The present requisitions are thus stated in the Register of the Academy for 1869:

The candidate is required by law to be proficient in reading and writing; in the elements of English grammar; in descriptive geography, particularly of our own country; and in the history of the United States. In arithmetic, the various operations in addition, subtraction, multiplication, and division, reduction, simple and compound proportion, and vulgar and decimal fractions, must be thoroughly understood and readily performed.

We recommend that hereafter the examination for admission should

require proficiency in reading, writing, and orthography; arithmetic, mental and written, including all the rules and operations usually taught in the high schools of the country; algebra, through quadratic equations; a thorough acquaintance with English grammar, and proficiency in composition; descriptive geography, and the history of the United States. The examination to be in writing, according to the plan already adopted in part by the academic board of the institution.

As candidates are now, according to the existing laws, appointed a year before entering the Academy, they ought easily to attain this standard. Such a change would certainly improve the character of the Cadet Corps, and greatly diminish the number of those who, after a year or two of trial and mortifying failure, are turned back or dismissed.

In many congressional districts the candidate has of late been chosen by a competitive examination, and thus far with the best results. Should this mode of appointment become general, it would do more than almost any other measure to improve and elevate the character of the institution. Such an examination, both of the natural ability and attainments of the competitors, would furnish the fairest as well as most advantageous method of selection, placing all the youth of a district upon a footing of equality, and removing from the appointing power every suspicion of favoritism or other improper motives.

#### DISCIPLINE.

The discipline of the institution appears to be in excellent condition. The cadets seem to be characterized by a high sense of honor and to be restrained by it from ungentlemanly and unsoldierly conduct. Serious offenses are very rare, and the greater part of the demerits which figure upon the records are only careless or unintentional infractions of some of the numerous minute regulations which, though necessary to the discipline of a military academy, require for their perfect observance a watchfulness rarely exercised by young men at this period of life.

The barbarous and ungentlemanly customs that used to prevail in the treatment of the entering class have almost disappeared, a result mainly due to the skillful and judicious management of the Superintendent.

The system of granting privileges as a reward of good behavior works admirably, and seems susceptible of still greater development; and it is worthy of consideration whether the range of recreation and amusement might not advantageously be extended; whether the system of instruction and discipline as yet sufficiently recognizes the *boy* in the cadet.

#### PAY OF INSTRUCTORS AND OFFICERS.

The compensation of the instructors, whether we measure it against the value of the service rendered, the dignity of the employer, or the amount needed to afford a comfortable support at West Point, is very inadequate, and ought to be increased. Many of the assistant professors selected from the Army on account of their reputation for ability and attainment suffer a practical diminution of pay by their assignment to duty here, an injustice that ought to be remedied.

The board desire to call special attention to the cases of the assistant librarian (who for twenty-eight years has had almost the entire charge of the library) and the assistant to the professor of chemistry, intrusted with duties involving great responsibility, and requiring a high order of ability. They have always proved themselves capable and trustworthy, yet they hold the position and receive only the pay of private soldiers

on ordinary extra duty. We need hardly suggest that simple justice requires an increase of their compensation.

#### THE LIBRARY.

This was found to be in good condition. The collection of scientific and professional works is excellent—one of the best in the country. In general literature the library, however, is hardly what it ought to be. The selection seems to have been made with less care, and, consequently, in many departments, in history for instance, it is not only unsystematic, but contains many works of little value, while many standard works of importance are wanting. To remedy this we would recommend more attention both to the selection of miscellaneous books and to the supplying of the different departments in their due proportion. We recommend, also, an increase of at least 50 per cent. in the appropriation for the maintenance and increase of the library. On account of high prices of books and binding, the appropriations of the last few years have been insufficient.

#### ASTRONOMICAL AND METEOROLOGICAL OBSERVATORY.

The institution is provided with a fine collection of astronomical instruments, to which, however, a chronograph should immediately be added. These are well mounted, and if properly used might furnish important contributions to science. At present, however, they remain almost entirely idle, because the time of the professor of this department, and his assistants, is so closely occupied with the duties of instruction; no man can teach through the day and observe during the night, to say nothing about the reduction of the observations obtained. To utilize this valuable material, therefore, we respectfully recommend that two or three young officers, of those most distinguished for aptitude and attainment in astronomy, be detailed as astronomical observers under the direction of the professor. They might also give special instruction in practical astronomy to certain of the cadets who should be selected for their proficiency. This would provide a body of skillful astronomers for the topographical operations of the War Department, would supply the corresponding observations and star determinations to be used in connection with the work of parties now in the field, (for which, at present, they depend mainly upon the courtesy of the Naval Observatory,) and would go far to restore to the Academy the scientific preëminence which it originally held, but has partly lost through the more rapid advance of other institutions. It may be added that these recommendations fall in with the opinion and desires of the professor of the astronomical department.

#### LABORATORY, CABINET, ETC.

The Board of Visitors last year called attention to the deficiency of the cabinets of mineralogy and natural history. No less important is the total want of all suitable laboratory accommodation for instruction in chemistry and physics, all of the first-rate, and many of the second-class colleges of the country being far better provided in this respect. The valuable philosophical apparatus of the institution, and all the collections of models, trophies, scientific specimens, &c., are contained in a building which is dangerously exposed to fire, and which fails entirely to furnish the needed accommodations and facilities. A suitable regard

to the good name and efficiency of the institution requires that this state of things should be remedied without delay.

#### CHAPEL.

The present chapel is too small, and in many other respects unsatisfactory; a new one, capable of seating 800 or 1,000 persons, is much wanted.

#### QUARTERMASTER'S AFFAIRS.

The accounts, papers, and general office business of the quartermaster appear to be in perfect order. As all the reports of this office are made on prescribed forms, and at regular intervals, to the War Department, and are subject to well-known and rigid checks and balances, their accuracy can be more readily investigated at Washington than by the Board of Visitors. We have every reason to think that the requirements of law are strictly observed.

The articles of public property in charge of the quartermaster are, as far as possible, conveniently arranged and well looked after. But the buildings placed at his disposal for storage and stabling are wholly insufficient and quite unsafe. With the exception of one stable recently erected there is not a good building among all the shops, stables, and store-rooms. These are mere frame sheds, patched and added to in a temporary manner. They are dangerously liable to fire, and are in many instances much decayed and cannot be regarded as of any permanent value. The stabling, except the one building before referred to, is altogether unsuited to its purposes. We recommend an appropriation for new and substantial storehouses, shops, and stables. New quarters for the post band seem to be much needed. The barracks at present used are dilapidated frame buildings, affording neither sufficient room nor comfortable quarters for the men. The musicians are many of them married and of a class superior to the average of enlisted men. To retain their services, (which are essential,) as well as in the interest of propriety and regard to the men's comfort, we think new and commodious barracks for the band should be provided.

We suggest, also, that much time and labor of the cavalry detachment stationed at the Military Academy could be secured by completing the cavalry stable, near the riding hall, according to its original design; that is, by adding a story in which barracks should be allotted to the men. By so doing the men would constantly be near their horses, constantly under their officer's eye, and would be saved the time and labor now expended in marching from their quarters to the stable where their chief duty is performed.

Whatever buildings are hereafter erected should be located and constructed with reference to some well-considered general plan. By so doing not only will a better class of buildings most probably be secured, but a symmetry of arrangement will result, and the unsightly and patchwork appearance that now deforms the northern portion of the Government property will be remedied.

An increase in the number of horses allowed for the service of the Academy is very desirable. At present the same horses have to be used both for artillery and cavalry drill, and are consequently pretty nearly spoiled for both. It would require fifty or sixty additional animals to relieve this difficulty.

## COMMISSARY AFFAIRS.

We have given much attention to the subject of the cadet mess. This is conducted by a purveyor, who employs the necessary cooks and other assistants, and is himself supervised by a council composed of the commandant of cadets, the quartermaster, and the treasurer of the post. All provisions consumed at the mess are purchased by the purveyor or furnished from the cadets' garden, which is cultivated by hired labor. The total sum of purchases, wages, &c., is equally divided among the cadets, and causes their expense for board to amount to from \$20 to \$22 per month each. This sum is deducted from their pay. Our examination assures us that the purveyor is strictly supervised by the council of administration, and his bills of purchases and issues closely scrutinized. Everything about the mess hall and kitchens is scrupulously neat, and the quality of provisions furnished is in general excellent. There is room for improvement in the cooking and mode of serving the meals. We would suggest that a minute inspection of the cooking of each meal, if made by an officer conversant with the laws of hygiene, might incidentally furnish the cadets who from time to time accompanied him with a fund of practical knowledge as to the proper preparation of food that would prove of the greatest utility in their command of troops during after years.

## ADMINISTRATION.

The remarks already made in other connections sufficiently indicate our appreciation of the administration of the institution. We found everywhere evidences of a superintendence faithful, judicious, and earnestly devoted to its interests.

In concluding this report the board desire to record distinctly their regard and admiration for the Military Academy, to which the nation already owes so much, upon which so much depends for the future. Our few criticisms are presented in no unfriendly spirit, but with the sincere desire that an institution already so excellent may be further improved. We see no need of radical changes, only of development and progress; and we believe that we merely give expression to the general feeling of the people in urging that all the measures of Government for the maintenance and improvement of the Academy should be characterized by a generous liberality.

JOHN P. NEWMAN, *District of Columbia, President.*

CHARLES A. YOUNG, *New Hampshire, Secretary.*

JOHN MASON BROWN, *Kentucky.*

DAVID D. PORTER, *Vice-Admiral United States Navy.*

BARNAS SEARS, *Virginia.*

THOMAS SETTLE, *North Carolina.*

ITHAMAR C. SLOAN, *Wisconsin.*

Hon. SECRETARY OF WAR,  
*Washington, D. C.*